

## **Summary of Data Collected on the Cle Elum – Roslyn High School Health Survey**

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### **1. PURPOSE**

In response to requests from the Kittitas County Health District and the Cle Elum – Roslyn Indoor Air Quality Coalition, the Washington State Department of Health (WSDOH) conducted a survey of health symptoms among students at Cle Elum – Roslyn High School. The WSDOH stated that such a survey could provide information about

- the number and percent of students reporting symptoms and
- the places in the school where the symptoms occur.

Additionally, the survey might be useful as a baseline to determine whether health improves after environmental remediation. The survey could not answer questions about what was causing the symptoms.

### **2. METHOD**

The survey was developed by the WSDOH in consultation with the Cle Elum – Roslyn Indoor Air Quality Coalition. WSDOH administered the survey on two Thursdays in May 2002. For comparison, WSDOH also administered the survey on two Thursdays in May at the Ellensburg High School. We used several different statistical tests to determine whether differences between Cle Elum and Ellensburg were statistically significant. While we do not report on the statistical significance in the data shown below, in general, differences were statistically significant. Additional detail on methods is available upon request.

### **3. SUMMARY OF MAJOR FINDINGS**

#### ***3.1. Symptom onset in the previous three days***

- In general, students at Cle Elum – Roslyn High School reported experiencing symptoms in the last three days two to three times more frequently than students in Ellensburg.

- Excluding those who also reported colds, the symptoms reported most often were abnormal tiredness (60% in Cle Elum versus 29% in Ellensburg), headache (59% versus 29%), and itchy eyes (44% versus 16%).
- The Cle Elum survey asked where the student was when the specific symptom began. About one-fifth of the time the student gave no specific location. When a location was provided, “when I entered the school” was the most common response. Classrooms in which at least 20 students reported symptom onset were scattered throughout the school and so symptom onset does not appear to cluster by wing or specific area.

### **3.2. Conditions with statewide comparison data**

- 43% of students in Cle Elum reported depression in the last year compared to 22% in Ellensburg and 30% statewide.
- 20% of students in Cle Elum reported having ever been told by a doctor or other health care professional that they had asthma compared to 15% in Ellensburg and 21% statewide.
- 12% of students in Cle Elum reported having had an asthma attack or using asthma medication in the past year compared to 10% in Ellensburg and 15% statewide.

### **3.3. Other conditions**

- 61% of students in Cle Elum reported menstrual irregularities in the last three months compared to 24% in Ellensburg. Differences persisted when adjusting for grade. There were no patterns in the specific type of irregularity.
- About twice as many students in Cle Elum reported unexplained bruising (24% in past three months) compared to Ellensburg (12%).
- 19% of students in Cle Elum reported lumps that developed since September and lasted for at least one month compared to 6% in Ellensburg.
- Fewer students in Cle Elum (35%) reported being told by a doctor or other health care professional they had allergies compared to Ellensburg (41%).

## **4. CONCLUSIONS**

In general, symptoms were reported two to three times more frequently in Cle Elum than in Ellensburg with several symptoms being reported by a relatively large proportion of the students. The most frequently reported site of onset was at the entrance to the school. A relatively large number of students reported the location of symptom onset in classrooms and areas scattered throughout the school, and these reports did not cluster by wing or general area. These data can be used as baseline data to determine whether reports of symptoms decline after environmental remediation.

## 5. DETAIL

The following section provides detailed information on most of the questions asked on the survey. The Washington State Department of Health can provide additional detail upon request.

### Who Responded?

The completion rate measures the number of students who took the survey in relation to the number of students in the school. When completion rates are low, we are concerned that the data might not provide a good estimate of the true picture. For example, if a lot of students missed the survey because they were ill and not in school, we would likely underestimate the proportion of students experiencing different symptoms. For this type of survey, completion rates of 70% are generally considered adequate. Table 1 shows that completion rates were very high in both Cle Elum and Ellensburg (87% and 89% respectively) and consequently, if there are inaccuracies due to non-completion, they are most likely small.

**Table 1: Survey Response**

	Cle Elum	Ellensburg
Enrollment*	300	225
Completed surveys	260	201
Completion rate	260/300=87%	201/225=89%
Refused	4	0
Opt out by parents	2	0
Absent, taking different test	6	0
Absent, senior day/work out of school	0	11
Absent, sick	1	0
Absent, unknown	25	12
Couldn't code survey	2	1

\* This is the number of active students (i.e. not suspended) in the classes surveyed. For Cle Elum this also includes the students who were not enrolled in a history class. These students were surveyed on the make-up date.

Table 2 shows that the proportion of female and male respondents was about the same in Cle Elum and Ellensburg. There were relatively more students in the older grades in Ellensburg than in Cle Elum. Because the frequency of some symptoms varied by grade, we analyzed each symptom reported in the last three days by grade. We did not find substantive differences in our conclusions when we analyzed these symptoms by grade and when we combined all grades. For this reason, we have reported only the analyses in which we combined all grades.

**Table 2: Gender and Grade of Respondents**

	Cle Elum		Ellensburg	
<b>Gender</b>				
Female	123	47%	104	52%
Male	137	52%	97	48%
<b>Grade</b>				
9	72	28%	12	6%
10	52	20%	22	11%
11	74	28%	86	43%
12	62	24%	81	40%
<b>TOTAL</b>	260		201	

## Summary of Reported Symptoms

Table 3 summarizes the frequency of symptoms reported by students in Cle Elum and Ellensburg.

Questions 4 – 16 asked about symptoms that started in school in the last three days (Monday through Wednesday). Some of these symptoms often occur when someone has a cold. We excluded those who reported the symptom and reported having a cold from Table 3. We did this because the most likely reason for these symptoms was that the student also had a cold. The results do not change substantively when we include students with colds.

Questions 17 – 24 and question 27 asked about symptoms over different time periods. For these symptoms, a three-day period did not seem clinically meaningful. For the questions on depression and asthma, we used questions from a statewide school-based health survey conducted in 1999 so that we had statewide comparison data. More information on this survey is available at <http://www.doh.wa.gov/EHSPHL/Epidemiology/NICE/publications/YRBS99.PDF>.

Students in Cle Elum reported most symptoms two to three times more frequently than students in Ellensburg. The most commonly reported symptoms are abnormal tiredness, headache and itchy eyes. We had not heard complaints about diarrhea and diarrhea is generally not associated with indoor air quality. We included it on the questionnaire as one way to assess whether students were over reporting symptoms (i.e., just answering “yes” to all symptoms without giving the question much thought). The fact that diarrhea was the least frequently reported symptom is an indication that the students were attempting to give thoughtful responses.

**Table 3: Summary of Reported Symptoms**

	<b>Cle Elum</b>		<b>Ellensburg</b>	
<b>Symptom starting while at school during the last 3 days</b>	<b>(n=260)</b>		<b>(n=201)</b>	
Trouble Thinking	112	43%	41	20%
Dizziness	79	30%	26	13%
Nausea	62	24%	19	9%
Wheezing	63	24%	10	5%
Rashes	32	12%	2	1%
Nosebleeds	20	8%	9	4%
Diarrhea	11	4%	3	1%
Cold	86	33%	34	17%
<b>Symptom starting while at school during the last 3 days, excluding cold symptoms for those that had a cold</b>	<b>(n=174)</b>		<b>(n=167)</b>	
Abnormal Tiredness	104	60%	48	29%
Headache	102	59%	48	29%
Itchy Eyes	77	44%	26	16%
Stuffy Nose	66	38%	25	15%
Cough	54	31%	8	5%
Sore Throat	27	16%	6	4%

**Table 3: Summary of Reported Symptoms (continued)**

	<b>Cle Elum</b>		<b>Ellensburg</b>	
<b>Other symptoms</b>	<b>(n=260)</b>		<b>(n=201)</b>	
Depression (2 straight weeks in past 12 months)	112	43%	44	22%
Lumps under skin (1 month anytime since September)	48	19%	12	6%
Ever diagnosed with asthma	52	20%	30	15%
Asthma attack or taken asthma medication (past 12 months)	31	12%	19	10%
Used inhaler (past month)	33	13%	13	6%
Ever diagnosed with allergies	91	35%	83	41%
Bruising for no apparent reason (the last 3 months)	62	24%	24	12%
Menstrual irregularities (past 3 months)	<b>(n=123)</b>		<b>(n=104)</b>	
	75	61%	25	24%

Table 4 shows the responses to question 26 that asked about symptoms in the last three days that began while the students were not in school. For five of the symptoms, an equal percent of students in Cle Elum and Ellensburg reported symptoms beginning outside of school. For other symptoms, some were reported more frequently in Cle Elum and some in Ellensburg. These findings may indicate that there were not large differences in the outdoor environments of Cle Elum and Ellensburg during the weeks the survey was administered that were related to the symptoms on the survey. For example, if pollen counts had been substantially higher in one location than in another, we would have expected that itchy eyes, stuffy nose, wheezing and cough to be consistently higher in one area than the other.

**Table 4: Summary of Reported Symptoms in Last 3 Days Developing Outside of School**

<b>Symptom</b>	<b>Cle Elum</b>		<b>Ellensburg</b>	
<b>All students</b>	<b>(n=260)</b>		<b>(n=201)</b>	
Trouble Thinking	34	13%	29	14%
Dizziness	45	17%	25	12%
Nausea	35	13%	25	12%
Wheezing	33	13%	13	7%
Rashes	15	6%	4	2%
Diarrhea	14	6%	6	3%
<b>Excluding students with colds:</b>	<b>(n=174)</b>		<b>(n=167)</b>	
Abnormal Tiredness	34	20%	37	22%
Headache	60	34%	64	38%
Itchy Eyes	30	17%	45	27%
Stuffy Nose	49	28%	57	34%
Cough	35	20%	12	7%
Sore Throat	36	21%	33	20%

## Number of symptoms reported

Table 5 shows the number of symptoms beginning in school in the last 3 days reported by each student in answering questions 4 – 16. We wanted to assess the extent to which reports of these symptoms reflected many students reporting a few symptoms or a few students reporting many symptoms. About two-thirds of the students in Cle Elum reported four or fewer symptoms. In Table 5, those who only reported colds and cold symptoms are categorized as “none.”

**Table 5: Number of symptoms reported**

Number of symptoms reported	Cle Elum		Ellensburg	
	number of students	percent	number of students	percent
None	33	13%	72	36%
1	43	17%	51	25%
2	38	15%	32	16%
3	37	14%	20	10%
4	18	7%	11	5%
5	31	12%	6	3%
6	20	8%	4	2%
7	12	5%	2	1%
8	11	4%	2	1%
9	6	2%	0	0%
10	8	3%	0	0%
11	3	1%	1	<1%

## Location in school where symptoms begin

If students reported symptoms that started in school in the last three days, they were asked to describe where they were when the symptom started. Table 6 on the following page shows the locations reported by the students. If a student reported more than one symptom beginning in a particular location, that location was counted only once for that student. Thus, “number” in Table 6 is the number of students reporting symptom onset in a specific location. “Percent” shows that number as a proportion of the 260 respondents. Many students reported more than one location for each symptom. Some rooms were reported more frequently than others, but it is difficult to directly compare the number of reports because each room has a different number of students visiting it each day. For example, every student enters the school each day, but not every student spends time in each classroom. Without knowing how many students are in each room each day, we do not know what proportion of students in a classroom experience symptom onset in that room. Classrooms in which at least 20 students reported symptom onset were scattered throughout the school and so symptom onset does not appear to cluster by wing or specific area.

**Table 6: Locations reported at least once by a student**

Location	Number	Percent
'When I enter school'	64	25%
Miller	36	14%
Basterrechea	35	13%
Commons	33	13%
Bender	32	12%
Briggs	28	11%
Gym	27	10%
Nevills	25	10%
Wilson	23	9%
Other	21	8%
Hill	20	8%
Rusho	19	7%
Hamel	16	6%
Hutchins (Computer room)	14	5%
Muzzall	14	5%
Osborn	14	5%
Norwood	13	5%
Arnold	12	5%
Aldrich	11	4%
Cooke	11	4%
Library	11	4%
Gibson	9	3%
O'Donnell, M	9	3%
Randelman	7	3%
Capps	6	2%
Shop	6	2%
O'Donnell, T	4	2%
West wing	2	1%
Music room	1	0%
Senior wing	1	0%

## Symptoms in the past month

In addition to asking about symptoms starting in school in the last three days, questions 4 - 16 also asked about the frequency of the symptoms in the past month, when these symptoms usually went away and what types of medicine the student took for the symptom. The responses to these items are shown below. As with the responses to the symptoms beginning in the past 3 days, reports of symptoms associated with colds are counted as "never" if the student also reported having colds. The order of the symptoms below is the same as the order in the survey.

The pattern of more reporting of symptoms in Cle Elum than in Ellensburg that was evident for symptoms in the last three days was also apparent in the reports for the past month. As with symptoms occurring over the last three days, headache and abnormal tiredness were the symptoms most frequently reported over the past month.

We urge members of the Cle Elum – Roslyn Indoor Air Quality Coalition to review the detailed information presented below to determine whether these results shed light on the questions the Coalition hopes to answer. We note that taking prescription medication is one indication that the student has seen a health care provider for the condition.

### ***Sore Throat (Those with colds counted as "never.")***

Over the past month, how often have you had a sore throat that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	4	2%	1	0%
2 2 to 4 days per week	32	12%	4	2%
3 About 1 day per week	34	13%	5	2%
4 Rarely	58	22%	40	20%
5 Never	84	32%	129	64%
9 Don't know	36	14%	19	9%
No response	12	5%	3	1%

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	17	13%	8	16%
2 After school or during the night	63	49%	18	36%
3 Not until the weekend	19	15%	4	8%
4 Other (specify): _____	7	5%	14	28%
9 Don't know	18	14%	5	10%
Not Applicable or missing	136		152	

In the last month, have you taken any prescription medication for a sore throat?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	10	4%	6	3%
2 Yes, non-prescription (over the counter) medications	35	13%	11	5%
3 Yes, <b>both</b> prescription and non-prescription medications	8	3%	5	2%
4 No	190	73%	174	87%
9 Don't know	6	2%	2	1%
No response	11	4%	3	1%

**Dry Cough (Those with colds counted as “never.”)**

Over the past month, how often have you had a dry cough that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	20	8%	2	1%
2 2 to 4 days per week	25	10%	5	2%
3 About 1 day per week	31	12%	2	1%
4 Rarely	31	12%	28	14%
5 Never	106	41%	143	71%
9 Don't know	35	13%	14	7%
No response	12	5%	6	3%

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	18	17%	8	22%
2 After school or during the night	37	35%	8	22%
3 Not until the weekend	21	20%	2	5%
4 Other (specify): _____	12	11%	8	22%
9 Don't know	17	16%	9	24%
Not Applicable or missing	155		165	

In the last month, have you taken any prescription medication for dry cough?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	5	2%	5	2%
2 Yes, non-prescription (over the counter) medications	26	10%	3	1%
3 Yes, <b>both</b> prescription and non-prescription medications	6	2%	0	0%
4 No	200	77%	175	87%
9 Don't know	10	4%	6	3%
No response	13	5%	11	5%

**Stuffy Nose (Those with colds counted as “never.”)**

Over the past month, how often have you had a stuffy nose that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	36	14%	3	1%
2 2 to 4 days per week	52	20%	13	6%
3 About 1 day per week	30	12%	8	4%
4 Rarely	42	16%	33	16%
5 Never	64	25%	117	58%
9 Don't know	30	12%	22	11%
No response	6	2%	4	2%

**Stuffy Nose (continued) (Those with colds counted as “never.”)**

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	20	13%	13	23%
2 After school or during the night	75	47%	11	19%
3 Not until the weekend	20	13%	3	5%
4 Other (specify): _____	20	13%	12	21%
9 Don't know	18	11%	19	33%
Not Applicable or missing	107		142	

In the last month, have you taken any prescription medication for a stuffy nose?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	7	3%	11	5%
2 Yes, non-prescription (over the counter) medications	38	15%	12	6%
3 Yes, <b>both</b> prescription and non-prescription medications	4	2%	2	1%
4 No	198	76%	168	84%
9 Don't know	7	3%	3	1%
No response	6	2%	4	2%

**Colds**

Over the past month, how often have you had colds that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	19	7%	7	3%
2 2 to 4 days per week	39	15%	10	5%
3 About 1 day per week	25	10%	8	4%
4 Rarely	76	29%	61	30%
5 Never	72	28%	97	48%
9 Don't know	25	10%	13	6%
No response	4	2%	5	2%

In the last month, have you taken any prescription medication for a cold?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	8	3%	7	3%
2 Yes, non-prescription (over the counter) medications	56	22%	21	10%
3 Yes, <b>both</b> prescription and non-prescription medications	9	3%	3	1%
4 No	175	67%	163	81%
9 Don't know	5	2%	2	1%
No response	7	3%	5	2%

***Itchy Eyes (Those with colds counted as “never.”)***

Over the past month, how often have you had itchy eyes that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	37	14%	2	1%
2 2 to 4 days per week	47	18%	10	5%
3 About 1 day per week	27	10%	9	4%
4 Rarely	37	14%	23	11%
5 Never	86	33%	141	70%
9 Don't know	16	6%	10	5%
No response	10	4%	4	2%

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	27	18%	11	25%
2 After school or during the night	69	47%	11	25%
3 Not until the weekend	11	7%	2	5%
4 Other (specify): _____	14	9%	7	16%
9 Don't know	20	14%	8	18%
Not Applicable or missing	119		160	

In the last month, have you taken any prescription medication for itchy eyes?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	5	2%	7	3%
2 Yes, non-prescription (over the counter) medications	30	12%	5	2%
3 Yes, <b>both</b> prescription and non-prescription medications	1	0%	1	0%
4 No	209	80%	178	89%
9 Don't know	4	2%	4	2%
No response	11	4%	4	2%

***Headache (Those with colds counted as “never.”)***

Over the past month, how often have you had a headache that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	61	23%	6	3%
2 2 to 4 days per week	65	25%	15	7%
3 About 1 day per week	43	17%	26	13%
4 Rarely	40	15%	67	33%
5 Never	39	15%	75	37%
9 Don't know	11	4%	7	3%
No response	1	0%	4	2%

**Headache (continued) (Those with colds counted as “never.”)**

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	39	19%	32	28%
2 After school or during the night	113	54%	39	34%
3 Not until the weekend	16	8%	1	1%
4 Other (specify): _____	8	4%	20	18%
9 Don't know	11	5%	11	10%
Not Applicable or missing	73		97	

In the last month, have you taken any prescription medication for a headache?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	7	3%	4	2%
2 Yes, non-prescription (over the counter) medications	111	43%	52	26%
3 Yes, <b>both</b> prescription and non-prescription medications	6	2%	3	1%
4 No	124	48%	133	66%
9 Don't know	8	3%	3	1%
No response	4	2%	5	2%

**Nausea**Over the past month, how often have you had nausea that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	10	4%	1	0%
2 2 to 4 days per week	18	7%	1	0%
3 About 1 day per week	27	10%	8	4%
4 Rarely	47	18%	32	16%
5 Never	126	48%	138	69%
9 Don't know	22	8%	13	6%
No response	10	4%	4	2%

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	25	25%	12	29%
2 After school or during the night	40	39%	10	24%
3 Not until the weekend	8	8%	1	2%
4 Other (specify): _____	11	11%	6	14%
9 Don't know	16	16%	10	24%
Not Applicable or missing	160		158	

### ***Nausea (continued)***

In the last month, have you taken any prescription medication for nausea?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	4	2%	2	1%
2 Yes, non-prescription (over the counter) medications	15	6%	4	2%
3 Yes, <b>both</b> prescription and non-prescription medications	0	0%	1	0%
4 No	218	84%	183	91%
9 Don't know	11	4%	3	1%
No response	12	5%	4	2%

### ***Diarrhea***

Over the past month, how often have you had diarrhea that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	6	2%	0	0%
2 2 to 4 days per week	2	1%	0	0%
3 About 1 day per week	4	2%	0	0%
4 Rarely	15	6%	7	3%
5 Never	205	79%	179	89%
9 Don't know	14	5%	8	4%
No response	14	5%	5	2%

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	3	11%	2	29%
2 After school or during the night	9	33%	2	29%
3 Not until the weekend	1	4%	1	14%
4 Other (specify): _____	8	30%	0	0%
9 Don't know	13	48%	7	100%
Not Applicable or missing	226		187	

In the last month, have you taken any prescription medication for diarrhea?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	2	1%	0	0%
2 Yes, non-prescription (over the counter) medications	4	2%	1	0%
3 Yes, <b>both</b> prescription and non-prescription medications	0	0%	0	0%
4 No	234	90%	190	95%
9 Don't know	5	2%	2	1%
No response	15	6%	6	3%

### ***Wheezing or Other Difficulty Breathing***

Over the past month, how often have you had wheezing or other difficulty breathing that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	25	10%	3	1%
2 2 to 4 days per week	21	8%	0	0%
3 About 1 day per week	25	10%	3	1%
4 Rarely	20	8%	8	4%
5 Never	143	55%	168	84%
9 Don't know	17	7%	14	7%
No response	8	3%	3	1%

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	17	19%	4	29%
2 After school or during the night	37	41%	2	14%
3 Not until the weekend	10	11%	0	0%
4 Other (specify): _____	10	11%	5	36%
9 Don't know	15	16%	5	36%
Not Applicable or missing	170		183	

In the last month, have you taken any prescription medication for wheezing or other difficulty breathing?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	16	6%	7	3%
2 Yes, non-prescription (over the counter) medications	9	3%	0	0%
3 Yes, <b>both</b> prescription and non-prescription medications	2	1%	0	0%
4 No	216	83%	184	92%
9 Don't know	8	3%	3	1%
No response	8	3%	5	2%

### ***Abnormal Tiredness (Those with colds counted as "never.")***

Over the past month, how often have you had episodes of feeling very tired at school even after having a good night's sleep?

	Cle Elum		Ellensburg	
1 Every school day	76	29%	9	4%
2 2 to 4 days per week	69	27%	33	16%
3 About 1 day per week	30	12%	19	9%
4 Rarely	16	6%	30	15%
5 Never	56	22%	99	49%
9 Don't know	7	3%	8	4%
No response	5	2%	3	1%

**Abnormal Tiredness (continued) (Those with colds counted as “never.”)**

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	26	14%	10	11%
2 After school or during the night	77	40%	22	24%
3 Not until the weekend	45	24%	12	13%
4 Other (specify): _____	18	9%	23	25%
9 Don't know	12	6%	11	12%
Not Applicable or missing	81		123	

In the last month, have you taken any prescription medication for abnormal tiredness?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	2	1%	0	0%
2 Yes, non-prescription (over the counter) medications	15	6%	4	2%
3 Yes, <b>both</b> prescription and non-prescription medications	1	0%	0	0%
4 No	231	89%	190	95%
9 Don't know	5	2%	4	2%
No response	5	2%	3	1%

**Trouble Thinking**

Over the past month, how often have you had a time when you had trouble thinking that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	44	17%	14	7%
2 2 to 4 days per week	42	16%	9	4%
3 About 1 day per week	27	10%	14	7%
4 Rarely	25	10%	19	9%
5 Never	95	37%	126	63%
9 Don't know	18	7%	14	7%
No response	8	3%	4	2%

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	30	22%	10	18%
2 After school or during the night	41	30%	12	21%
3 Not until the weekend	19	14%	3	5%
4 Other (specify): _____	6	4%	5	9%
9 Don't know	24	17%	18	32%
Not Applicable or missing	139		152	

### ***Trouble Thinking (continued)***

In the last month, have you taken any prescription medication for trouble thinking?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	2	1%	2	1%
2 Yes, non-prescription (over the counter) medications	7	3%	1	0%
3 Yes, <b>both</b> prescription and non-prescription medications	0	0%	0	0%
4 No	236	91%	188	94%
9 Don't know	6	2%	5	2%
No response	8	3%	4	2%

### ***Dizziness***

Over the past month, how often have you had a time when you felt dizzy during school?

	Cle Elum		Ellensburg	
1 Every school day	15	6%	1	0%
2 2 to 4 days per week	30	12%	6	3%
3 About 1 day per week	33	13%	6	3%
4 Rarely	42	16%	28	14%
5 Never	118	45%	143	71%
9 Don't know	14	5%	11	5%
No response	7	3%	4	2%

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	45	38%	9	22%
2 After school or during the night	41	34%	11	27%
3 Not until the weekend	3	3%	0	0%
4 Other (specify): _____	10	8%	9	22%
9 Don't know	19	16%	8	20%
Not Applicable or missing	141		162	

In the last month, have you taken any prescription medication for dizziness?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	0	0%	1	0%
2 Yes, non-prescription (over the counter) medications	9	3%	0	0%
3 Yes, <b>both</b> prescription and non-prescription medications	0	0%	0	0%
4 No	236	91%	190	95%
9 Don't know	5	2%	4	2%
No response	9	3%	4	2%

## Rashes

Over the past month, how often have you had a rash that **started** in school?

	Cle Elum		Ellensburg	
1 Every school day	11	4%	0	0%
2 2 to 4 days per week	8	3%	0	0%
3 About 1 day per week	4	2%	2	1%
4 Rarely	16	6%	2	1%
5 Never	192	74%	184	92%
9 Don't know	18	7%	8	4%
No response	10	4%	4	2%

When does this problem usually go away?

	Cle Elum		Ellensburg	
1 Later during the school day	3	8%	0	0%
2 After school or during the night	3	8%	2	50%
3 Not until the weekend	7	18%	0	0%
4 Other (specify): _____	18	46%	5	125%
9 Don't know	17	44%	5	125%
Not Applicable or missing	211		188	

In the last month, have you taken any prescription medication for a rash?

	Cle Elum		Ellensburg	
1 Yes, prescription medication	5	2%	0	0%
2 Yes, non-prescription (over the counter) medications	8	3%	3	1%
3 Yes, <b>both</b> prescription and non-prescription medications	1	0%	0	0%
4 No	232	89%	187	93%
9 Don't know	4	2%	3	1%
No response	9	3%	7	3%

## Summary of Additional Questions

### Other symptoms or health problems

Question 25 asked students to report other health symptoms that were not included on the questionnaire. Not counting reports of menstrual irregularities that were asked about in question 27, 49 students in Cle Elum reported at least one other symptom, but eight of these students only reported symptoms that had been asked about previously. Eight students reported eye problems, such as watery eyes, burning or irritation. Five students reported body aches such as muscle, joint or back aches, or general soreness; five reported emotional problems, such as extreme anger or irritability; four reported skin problems, such as itching or dry skin; and four reported stomach aches or abdominal pain. Other symptoms were reported three or fewer times.

## **Menstrual irregularities**

There were no patterns in the students' descriptions of their menstrual irregularities. In Cle Elum, approximately 30% of the students did not answer this question and another 23% stated that their menses were irregular, but did not provide specifics. Almost 22% indicated that they did not menstruate often enough and about 14% indicated they menstruated too frequently.

## **Change in symptoms in the last 2 months**

Question 28 asked whether symptoms had gotten better or worse in the past 2 months. Approximately 50 students clearly stated that their symptoms had gotten worse, while about 15 clearly stated that their symptoms had gotten better. Other students reported that their symptoms did not change, left the question blank, stated that it did not apply to them or provided a comment that did not clearly indicate whether symptoms were better or worse.

## **Cause of symptoms**

Question 29 asked whether the student knew the cause of their symptoms. We asked this question, because we thought it might be informative to exclude those with known causes from the analyses. Very few students reported known causes and so we did not analyze the data excluding these students from the analyses. Nine students reported reasons for headaches, including issues related to wearing glasses, not eating, stress and lighting and eight students reported respiratory symptoms being caused by colds, asthma, or allergies.

## **Other comments**

Question 30 asked for additional comments. Most students did not give additional comments. Of the 44 students who made additional comments, most of them referred to the need to fix the school or gave additional detail on symptoms. Fewer than 10 students commented that they were fine, they thought the school was fine, they thought the survey was a waste of class time, or similar comments.